



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246



D119-796-241TRN
Job Sheet 198199



Part No: D119-796-241TRN

Job Qty: 1 pcs

Part Name: Crosstube Turning Detail



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 7/23/19

Job Tracking No:

Due Date: 12/2/19

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG RD119-796 REV.K IPP REV A RQ 14/05/27 VERIFIED BY DD IPP REV:B 16.05.04 AS PER DWG REV.I DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Mori Seiki TL-40 - 1	1 pcs		12/2/19	1.00	1.72	Mori Seiki TL-40 - 1		DAS 66 9-89 2019-08-11
110	QC 2	1 pcs		12/2/19	0.00	0.00	QC 2 - 1		
							QC 2 - 12		
							QC 2 - 14		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		
							QC 2 - 33		
							QC 2 - 35		
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 57		
							QC 2 - 62		
							QC 2 - 63		
							QC 2 - 8		DAS 66 9-89 2019-08-11
							QC 2 - 66		
							QC 2 - 64		

Plex 7/23/19 1:56 PM Dart.lajeunesse.marie

				QC 2 - 65	
				QC 2 - 5	
				QC 2 - 71	
				QC 2 - 73	
				QC 2 - 69	
120	Mori Selki TL-40 - 1 - B4B	1	12/2/19	1.00 1.72	Mori Selki TL-40 - 1 - B4B
	pcs				
130	QC 2	1	12/2/19	0.00 0.00	QC 2 - 1
	pcs				
					QC 2 - 12
					QC 2 - 14
					QC 2 - 17
					QC 2 - 19
					QC 2 - 2
					QC 2 - 20
					QC 2 - 22
					QC 2 - 23
					QC 2 - 25
					QC 2 - 32
					QC 2 - 33
					QC 2 - 35
					QC 2 - 39
					QC 2 - 4
					QC 2 - 40
					QC 2 - 44
					QC 2 - 45
					QC 2 - 48
					QC 2 - 49
					QC 2 - 50
					QC 2 - 51
					QC 2 - 52
					QC 2 - 57
					QC 2 - 62
					QC 2 - 63
					QC 2 - 8
					QC 2 - 66
					QC 2 - 64
					QC 2 - 65
					QC 2 - 5
					QC 2 - 71
					QC 2 - 73
					QC 2 - 69
140	QC 8	1	12/2/19	0.00 0.00	QC 8 - 12
	pcs				
					QC 8 - 14
					QC 8 - 17
					QC 8 - 20
					QC 8 - 25
					QC 8 - 3
					QC 8 - 32
					QC 8 - 33
					QC 8 - 35
					QC 8 - 39
					QC 8 - 4
					QC 8 - 44
					QC 8 - 45
					QC 8 - 49
					QC 8 - 58
					QC 8 - 8
					QC 8 - 9
					QC 8 - 68

DAS

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

66

9-89

https://www.plexonline.com/ea2a18e7-edad-47f0-8f6e-77ef02b537a9/Plexus_Control/Report_View/Viewer_2.asp?URL=../Part/Job_Sheet.asp&Report=Tru... 3/5

170 Packaging 3-1 - Stock - B4B	1 pcs	12/2/19	0.00 0.00	QC 7 - 24	
				QC 7 - 43	
				QC 7 - 61	
				QC 7 - 81	
				Packaging 3 - 1 - B4B	
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
180 QC 21 - FG	1 pcs	12/2/19	0.00 0.00	QC 21 - FG - 21	DAG
				QC 21 - FG - 70	21
				QC 21 - FG - 53	9-85

✓ 19-10-11

DAG

21

9-85

OCT 1 1 2019

Part Op 100 - 1-Fill tube with sand & install plugs on both ends as per Folio FB298 2-Turn first side as per Folio FB298
 Descriptions: 110 - (QC2- Inspect parts off machine FAI/FAIB)
 120 - 1-Turn second side as per Folio FB298
 130 - (QC2- Inspect parts off machine FAI/FAIB)
 140 - (QC8- Inspect parts - second check)
 145 - GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.
 150 - 1- Handfinish X-TUBE INSIDE AND OUT. ALODINE AND ACID ETCH X-TUBE AS PER DWG . USE RED SCOTCH BRITE PAD.
 160 - (QC7-Inspect Chemical Conversion Coat)
 170 - (Identify as per dwg & Stock Location: _____) LOCATION : LG014
 180 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6023-106	Crosstube Material	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1	S013 837

7/23/2019

[Dart Hawkesbury] Job Sheet - Lajeunesse, Marie

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Mori Seiki TL-40 - 1	D6023-106	1	14	0
Part Specifications				
Specifications could not be found.				



DART Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 813 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Plex 7/23/19 1:56 PM Dart.lajeunesse.marie

Container No: S204492



Part: D119-796-241TRN

Job No: 198199

Serial No/Batch: S204492

Revision: K

Inspector:

Exp Date:

Instructions:

Date: 08/11/19

8

DART AEROSPACE LTD	Work Order:	198195
Description: Crosstube Assembly (AW119 MKII Aft)	Part Number:	D119-796-241TRN
Inspection Dwg: D119-796-241 Rev: <i>AK</i>	Page 1 of 2	

DAS
35
9-89

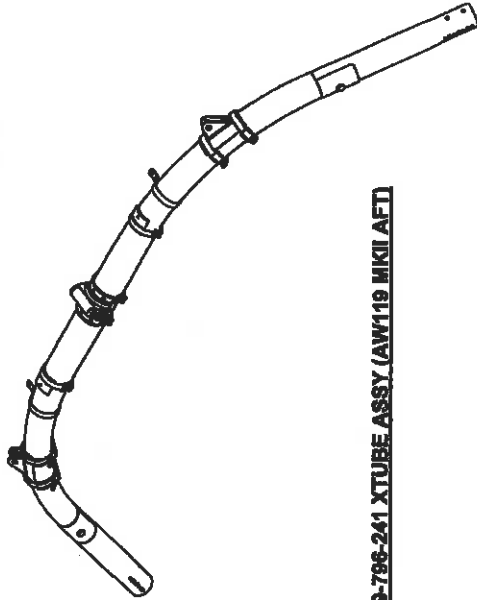
FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	5.88	+/-0.030	5.877	✓		CNC-08	
	2.516	+0.005/-0.000	2.521	✓		CNC-04	
	2.626	+0.005/-0.000	2.631	✓			
	2.627	+0.005/-0.000	2.632	✓			
	2.798	+0.005/-0.000	2.803	✓			
	2.799	+0.005/-0.000	2.804	✓			
	2.989	+0.005/-0.000	2.994	✓			
	3.191	+0.005/-0.000	3.196	✓		CNC-05	
	3.200	+0.005/-0.000	3.205	✓		"	
SIDE B	5.88	+/-0.030	5.881	✓		CNC-08	
	2.516	+0.005/-0.000	2.521	✓		CNC-04	
	2.626	+0.005/-0.000	2.631	✓			
	2.627	+0.005/-0.000	2.632	✓			
	2.798	+0.005/-0.000	2.803	✓			
	2.799	+0.005/-0.000	2.803	✓			
	2.989	+0.005/-0.000	2.994	✓			
	3.191	+0.005/-0.000	3.196	✓		CNC-05	
	3.200	+0.005/-0.000	3.205	✓		"	
	105.71	+/-0.020	105.69	✓		Tape	

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

WORK ORDER
NO 198198
19-05-24

D119-796-241 XTUBE ASSY (AW119 MKI AFT)



- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: MASK D5134-041-042 DAMPER SUPPORT ASSEMBLIES, CUFFS, D5138-1/2 CONTACT PADS, THE COMPLETE CIRCUMFERENCE OF THE TUBE UNDER THE D5122-1 CENTER SUPPORT AND THE TAB ON THE D5615-1 GROUNDING CLAMP PRIOR TO APPLICATION OF CLEAR COAT PAINT.
IF NECESSARY TOUCH UP PRIMER ON OUTSIDE OF CROSSTUBE PER PART QSI 005 4.2
APPLY WHITE CLEAR COAT TO THE UNDERSIDE OF CROSSTUBE AS SHOWN (84-2, HATCHED AREA).
PAINT THE UNDERSIDE OF CROSSTUBE AS SHOWN (84-2, HATCHED AREA).
PAINT OUTSIDE PER PART QSI 005 4.2
 - 3) TOLERANCES: PER PART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: IDENTIFY USING PART NUMBER "D119-796-241" AND BATCH NUMBER ON INSIDE OF CUFF PER QSI 044 6.4
 - 7) WEIGHT: 28.28 lbs
 - 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE.
THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
 - 9) INSTALL D5122-1 CENTER SUPPORT HAND TIGHT ONLY. DO NOT TORQUE. INSTALL RED TAG TO INDICATE "D5122-1 CENTER SUPPORT MUST BE BONDED PER IN-D119-796 PRIOR TO FLIGHT".
 - 10) PRIOR TO FINISHING, ABRASE MATING SURFACES OF D5138-1/2 AND SURFACE OF CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5138-1/2 CONTACT PADS AND INSTALL AT AN 8.4" OFFSET FROM THE CROSSTUBE BENDING PLANE. INSTALL MS21920-26 CLAMPS AND D5173-5 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
 - 11) TORQUE MS21920 CLAMPS 60 - 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY. THE NUT HAS NOT BOTTOMED-OUT AFTER TORQUING AND THE NUT IS FACING AFT.
 - 12) PRIOR TO FINISHING, POSITION AND INSTALL D5134-041-042 DAMPER SUPPORTS USING JIG DT10086. ABRASE MATING SURFACES OF THE D5134-041-042 DAMPER SUPPORTS AND CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5134-041-042. INSTALL MS21920-26 CLAMPS AND D5123-1 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS. ENSURE THAT THE MS21920 CLAMPS ARE POSITIONED AS SHOWN IN DETAIL C.
 - 13) PRIOR TO FINISHING, ABRASE MATING SURFACES OF CROSSTUBE AND D5152-043 WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. INSTALL D5152-043 WITH LAYER OF PROSEAL 890 ON INSIDE CONCAVE SURFACE, 0.100" MIN THK LOCATE D5152-043 USING TOOL DT10112.
 - 14) INSTALL THE D5616-1 GROUNDING CLAMP AND ASSOCIATED HARDWARE PER DETAIL "C" PRIOR TO FINISHING. TORQUE THE MS21042-3 NUT 12-15 IN-LB. COMPLETELY SEAL THE EDGES OF THE CLAMP USING PROSEAL 890.
 - 15) CARRY OUT A RESISTANCE CHECK BETWEEN THE D5615-1 GROUNDING CLAMP AND ANY UNPAINTED SECTION OF THE CROSSTUBE IN ACCORDANCE WITH AC43-13-B CHAPTER 11. MAXIMUM RESISTANCE IS 3 MILLIOMHS.

UNDER REVIEW
URF 18-789 18.07.04 (SAD)

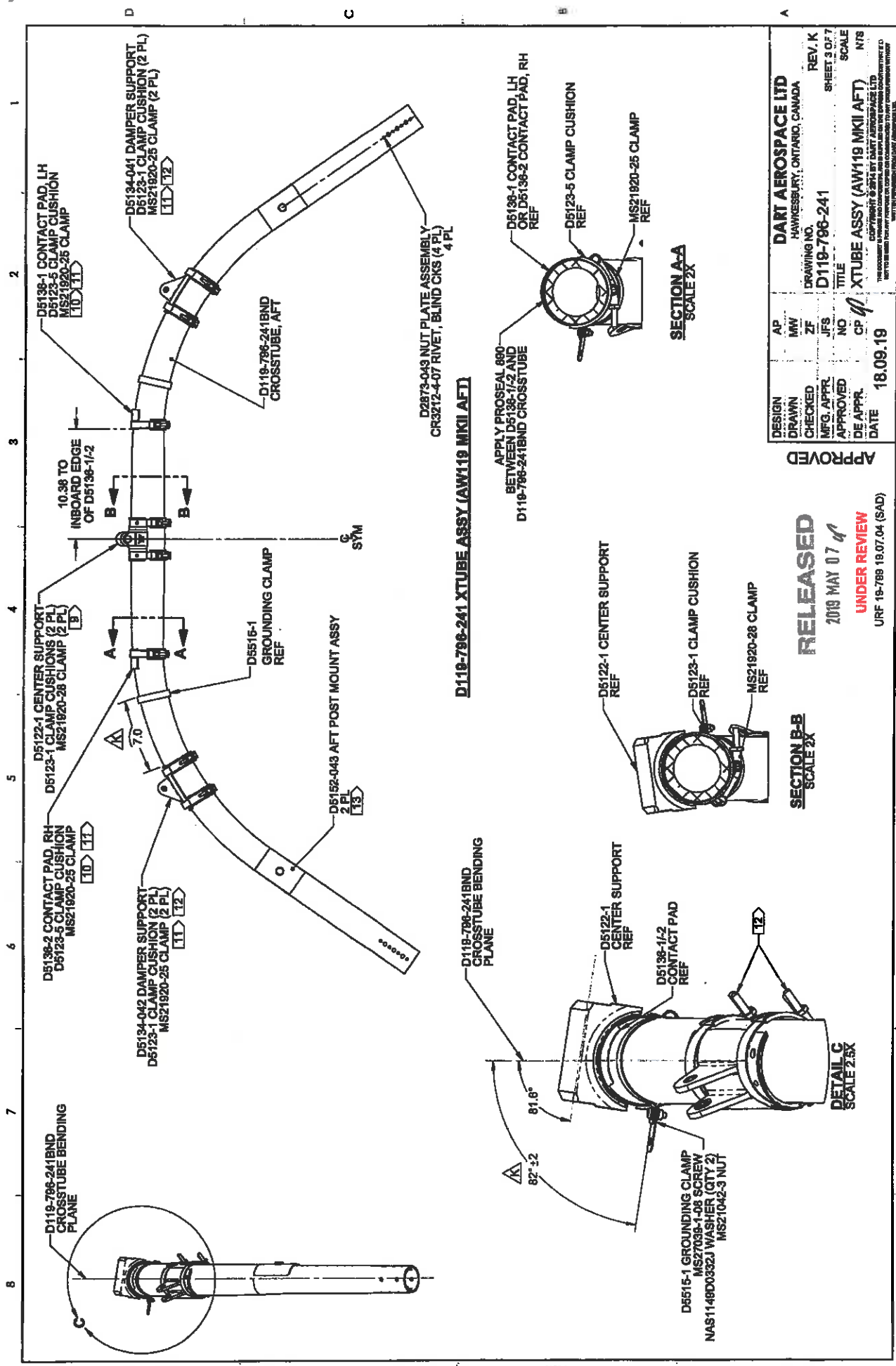
RELEASED

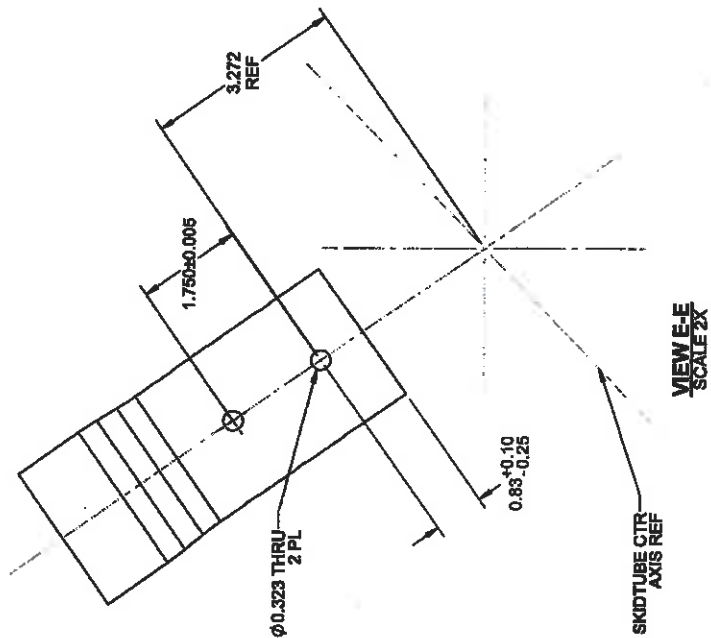
2018 MAY 07
EON #7-75

APPROVED

REV.	DESCRIPTION	BY	DATE
A	NEW ISSUE	AP	14.06.07
B	DESIGN	AP	
C	DRAWN	MMW	
D	CHECKED	MMW	
E	MFG. APPR.	JF	
F	APPROVED	ZF	
G	DE APPR.	NO	
H	DATE	CF	18.09.19
I	SCALE		
J	SHEET 1 OF 7		
K	REV. K		

DART AEROSPACE LTD	DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA	HAWKESBURY, ONTARIO, CANADA
DRAWING NO.	D119-796-241
TITLE	XTUBE ASSY (AW119 MKI AFT)
SCALE	MTS
SHEET 1 OF 7	
DATE	18.09.19





RELEASED

2019 MAY 07 

DESIGN	AP	DART AEROSPACE LTD
DRAWN	MMV	HAWTHORNSBURY, ONTARIO, CANADA
CHECKED	ZF	DRAWING NO.
MFG. APPR.	JFS	D119-798-241
APPROVED	NO	TITLE
DE APPR.	CP	XTUBE ASSY (AW119 MKII AFT)
DATE	18.09.19	REV. X
		SHEET 6 OF 7
		SCALE
		N75
		CONTRACT NO. 119
		THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES OF CONTRACT TO WHICH IT RELATES. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.



Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only

NCR No. _____

Job: _____

Part No. _____

DISPOSITION

Rework ☐ ☐ ☐
Scrap ☐ ☐ ☐
Use-as-is ☐ ☐ ☐

DEPARTMENT/PROCESS

Cross tube ☐ ☐ ☐
Small Fab ☐ ☐ ☐
Finishing ☐ ☐ ☐
Skid-tube ☐ ☐ ☐
Machining ☐ ☐ ☐
Large Fab ☐ ☐ ☐

Eng. (Non-AW) ☐ ☐ ☐
Prod. Eng. Coord. ☐ ☐ ☐
Rec/Store/Packaging ☐ ☐ ☐
Engineering ☐ ☐ ☐
Water Jet ☐ ☐ ☐
Supplier ☐ ☐ ☐
Quality ☐ ☐ ☐

Date: _____

Sequence #: _____

QTY Affected: _____

MRB (QS042)

Description Work Order Deviation

Disposition

Completed By _____

Lead hand / Supervisor _____

QC / QA Coordinator _____

Root Cause

Operator ☐ ☐ ☐ ☐ ☐
Manufacturing Process ☐ ☐ ☐ ☐ ☐
Equip/Tooling ☐ ☐ ☐ ☐ ☐
Handling/Preservation ☐ ☐ ☐ ☐ ☐
Material ☐ ☐ ☐ ☐ ☐
Product Improvement ☐ ☐ ☐ ☐ ☐
Process Improvement ☐ ☐ ☐ ☐ ☐
Human Factors ☐ ☐ ☐ ☐ ☐

FAULT CATEGORY

Pressure/Forced	Contamination	Power Loss/Surge	Positioned Wrong
☐	☐	☐	☐
Bending	Misaligned/off center	Folio/Program	Outside Tolerance
☐	☐	☐	☐
Crushing	BOM/Route	Grain Direction	Drawing
☐	☐	☐	☐
Cracks	Broken/Damage/Defect	Weld	Finish
☐	☐	☐	☐
Crimp/Kink/Ripple/Wave/Twist	Incomplete/Unclear Instructions	Wrong Stock Pulled	Part Lost/Missing
☐	☐	☐	☐
Marks/Chatter	Drill Holes	Out of Sequence	Misread
☐	☐	☐	☐
Mislabeled	Fit/Function	Off-set/Set-up	
☐	☐	☐	

Other/Details: _____